

Notice of Allowability

Application No.

10/537,150

Examiner

Paul A. Zucker

Applicant(s)

MARTINO-GAUCHI ET AL.

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 6/2/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20070807.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.


PAUL A. ZUCKER, PH.D.
PRIMARY EXAMINER

10/1621

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance: The instantly claimed process for the continuous preparation of ethyl lactate employing the instant method of dehydration is neither disclosed nor fairly suggested by prior art. Epperly et al (US 3,132,079 07-1981 teaches (Column 4, line 1- column 5, line 11) a process for dehydrating aqueous alcohol which comprises distilling an aqueous alcohol solution to produce an azeotropic mixture and contacting the vapor phase azeotropic mixture with a zeolitic material (molecular sieves) in order to produce anhydrous alcohol. Epperly teaches (FIGURE 2) the use of series of adsorption vessels in order to obtain complete dehydration. Epperly neither discloses nor fairly suggests the instantly employed dehydration-distillation cycles or the use of the method in a synthesis of ethyl lactate. The instantly claimed process is therefore patentable over the prior art

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

EXAMINER'S AMENDMENT

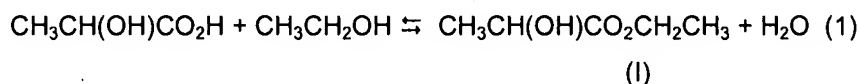
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven D. Boyd on August 7, 2007.

The claims have been amended as follows:

Claim 1: Please replace the entire text of claim 1 with the following:

-- (currently amended) A continuous process for the preparation of ethyl lactate (I) by esterification of lactic acid-[or of a lactic acid composition] using ethanol, according to the reaction (1):



which ~~consists in~~ comprises reacting said lactic acid or lactic acid composition with ethanol according to at an ethanol/lactic acid initial molar ratio at least equal to 2.5, in the presence of a catalyst, at reflux of the reaction medium, ~~which lies~~ at approximately 100°C, and under an absolute pressure ranging from 1.5 to 3 bar ~~and preferably ranging from 1.5 to 4.8 bar~~; said process being characterized in that a water/ethanol gas mixture close to the azeotrope is continuously extracted from the esterification reaction medium, in that this gas mixture is then dehydrated directly using molecular sieves, in that an ethanol gas stream, which can be recycled to the esterification reaction medium, and a stream composed of water and of ethanol are then recovered from said dehydration, which stream composed of water and of ethanol is subjected to a distillation, from which water and a water/ethanol azeotrope are obtained, which

water/ethanol azeotrope is injected at the top of the column for the distillation of the gas mixture extracted from the esterification reaction medium, and in that crude ethyl lactate is then continuously extracted, which crude ethyl lactate is subjected to purification, from which an ethyl lactate of high purity and heavy products are obtained. --;

Claim 4: Please replace the entire text of claim 4 with the following:

--(currently amended) The process as claimed in claim 3, characterized in that the selective adsorption of water, by passing, at a pressure identical to that applied to the esterification reaction medium, the water/ethanol mixture close to the azeotrope in the gas form through a bed of molecular sieve, and then the desorption of the water adsorbed beforehand, by lowering the pressure below 300 mbar and preferably below 100 mbar, are carried out alternately. --.

The specification has been amended as follows:

Page 4, line 12: Please insert the following into the specification at page 4, before the Detailed Description of the Invention:

Brief Description of the Drawing

Figure 1 is a schematic of a device which can be used to carry out the process of the present invention.

Conclusion

3. All questions pertaining to an application that has been allowed should be directed to the Office of Patent Publications Image Assistance Center at 888-786-0101.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Evonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul A. Zucker
Primary Examiner
Art Unit 1621